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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,547	01/17/2006	Junbae Lee	4915-0102PUS1	8535
2292 7590 10/31/2008 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER HOPKINS, ROBERT A				
ART UNIT		PAPER NUMBER		
1797				
NOTIFICATION DATE		DELIVERY MODE		
10/31/2008		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

### Office Action Summary

**Application No.**

10/522,547

**Applicant(s)**

LEE ET AL.

**Examiner**

Robert A. Hopkins

**Art Unit**

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF 298)  
Paper No(s)/Mail Date 1-27-05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "small pipe" in claim 1 is a relative term which renders the claim indefinite. The term "small" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Claims 2-10 depend on claim 1 and hence are also rejected.

The term "small flow rate reduction pipe" in claim 5 is a relative term which renders the claim indefinite. The term "small" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Claim 6 depends on claim 5 and hence is also rejected.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 and 7-10 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Gauthier et al(4222750).

Gauthier et al teaches a gas concentrator which produces concentrated gas by applying a pressure difference to adsorbent having selective adsorption property to specific gas from mixed gas and by separating the specific gas comprising a filter(11) for filtering out impurities from the mixed gas, a plurality of adsorption beds(16,17) containing the adsorbent for separating the specific gas from the mixed gas supplied via the filter and including a backflow prevention means(23,24) formed on channels(21) through which the separated gas is discharged therefrom, a small pipe(18) for interconnecting the channels at production stages of the adsorption beds with each other to perform processes of cleaning and applying vacuum pressure to the adsorption beds, a vacuum pumping means(12) connected to a channel for supplying the mixed gas to the adsorption beds, the vacuum pumping means generating the pressure difference caused from a difference between a vacuum pressure and a pressure of the mixed gas, a valve means(14; four way solenoid operated valve) comprising a channel base of a single body formed with channels respectively connected to the adsorption beds, the channel for supplying the mixed gas, and the vacuum pumping means, and solenoid drivers mounted in the channel base for switching the channels formed in the channel base in order to alternately apply the vacuum pressure and the pressure of the mixed gas to the adsorption beds, and a gas supplying means(27) for controllably supplying the mixed gas supplied from the filter to the gas separated and produced from the adsorption beds and then supplying a target space with the gas of which flow rate

and concentration is controlled. Gauthier et al further teaches wherein the channel base, which is formed in the single body formed with the channels, is formed with mounting portions for mounting the solenoid drivers, bed connecting portions to be connected to the adsorption beds, and a channel connecting portion to be connected to the channel for supplying the mixed gas. Gauthier et al further teaches wherein the solenoid driver comprises a frame for supporting the whole of the driver, a coil housed in the frame for providing a motive force by a current supplied, a plunger for opening and closing the channel through its reciprocation by the motive force of the coil, a guide pipe for guiding the plunger, and a pumping means connecting portion extended on the guide pipe. Gauthier et al further teaches wherein the channel base is inserted into and engaged with the adsorption beds by a cap attaching manner. Gauthier et al further teaches wherein the backflow prevention means formed on the respective channels for discharging the gas separated from the adsorption beds is a check valve. Gauthier et al further teaches wherein a sealing means for preventing backflow of the discharged gas separated and discharged from the adsorption beds and simultaneously blocking off external air is installed on the channel. Gauthier et al further teaches wherein a sealing means for blocking off external air is installed on a suction or discharge channel of the vacuum pumping means, wherein the sealing means is a check valve type. Gauthier et al further teaches wherein the gas supplying means supplies the target space with the gas of which the flow rate and concentration is controlled by using a flow rate control means installed on a channel for controlling flow rate of the gas discharged through the adsorption beds and a flow rate control means

installed on a channel for supplying the mixed gas which has not passed through the adsorption beds.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gauthier et al(4222750).

Gauthier et al teaches all of the limitations of claim 6 but is silent as to the specific form of the check valve as recited in claim 6. Examiner respectfully submits that check valves are well known for providing backflow prevention of a fluid, and therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to provide a check valve having the specific structure recited in claim 6 to provide for a check valve which does not allow for gas flow back into the adsorption beds of Gauthier et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Hopkins whose telephone number is 571-272-1159. The examiner can normally be reached on Monday-Thursday, 7:30am-5pm, every Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Rah  
October 27, 2008

/Robert A Hopkins/  
Primary Examiner, Art Unit 1797